



UNITED STATES PATENT AND TRADEMARK OFFICE

Ch

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,294	09/24/2001	Peter Krummrich	112740-277	9740
29177	7590	04/19/2005	EXAMINER	
BELL, BOYD & LLOYD, LLC P. O. BOX 1135 CHICAGO, IL 60690-1135			CHANG, RICHARD	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/937,294

Applicant(s)

KRUMMRICH, PETER

Examiner

Richard Chang

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/27/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 5,877,879 ("Naito") in view of US patent 5,430,568 ("Little et al.").

Regarding Claim 7, Naito teaches a system for channel-associated dispersion compensation of a digital wavelength-division multiplex signal, in which the signal is split into individual channel signals, which are individually, compensated (See Fig. 17) comprising of

a common optical dispersion compensator (52 indexed) to which the wavelength-division multiplex signal is supplied, the common optical dispersion compensator (52 indexed) outputting a part-compensated wavelength-division multiplex signal;

a wavelength-division demultiplexer (42) to which the part compensated wavelength division multiplex signal is supplied, the demultiplexer (42) splitting the part-compensated wavelength-division multiplex signal into individual part-compensated channel signals for output at outputs of the demultiplexer (42), and

an optical electrical converter (46 indexed) connected to each of the outputs of the demultiplexer (42) (See Fig. 17, Col. 9, lines 26-35).

Naito teaches substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

“an optical electrical converter and subsequent filter for residual compensation connected to each of the outputs of the demultiplexer wherein compensated signals are output at outputs of the filters”.

Little et al. teach a wavelength-division multiplexing system where output from the demultiplexer (45) is connected to optical electrical converter (50-53) and subsequent filter (80-83) for residual compensation connected to each of the outputs of the optical electrical converter (50-53) wherein compensated signals are output at outputs of the filters (80-83) (See Fig. 5, Col 10, lines 2-15).

A person of ordinary skill in the art would have been motivated to employ Little et al. in Naito in order to obtain a system for channel-associated dispersion compensation of a digital wavelength-division multiplex signal in which the signal is split into individual channel signals which are individually compensated and to take advantage of connecting an optical electrical converter and subsequent filter for residual compensation connected to each of the outputs of the demultiplexer wherein compensated signals are output at outputs of the filters in claim 7.

The suggestion/motivation to do so would have been to connect the individual WDM demultiplexer output to optical electrical converter (50-53) and subsequent filter (80-83) for residual compensation at outputs of the filters (80-83) (See Fig. 5, Col 10, lines 2-15). At the time the invention was made, therefore, it would have been obvious

to one of ordinary skill in the art to which the invention pertains to combine Little et al. with the Naito to obtain the inventions specified in claim 7.

Regarding claims 8-11, these claims have limitation that is similar to those of claim 1 and Little et al. further teach that the optical electrical converters convert the part-compensated channel signals into electrical digital signals which are supplied to multiple pole elliptical bandpass filters (80-83) (See Fig. 5, Col 17, lines 5-14), and the official notice indicates that the multiple pole elliptical bandpass filter can be implemented in either second order or higher order analog filter or digital filter.

A person of ordinary skill in the art would have been motivated to employ Little et al. in Naito in order to obtain a system for channel-associated dispersion compensation of a digital wavelength-division multiplex signal in which the signal is split into individual channel signals which are individually compensated and to take advantage of converting the part-compensated channel signals into electrical digital signals which are supplied to 2nd order multiple pole elliptical bandpass digital or analog filters in claim 7.

The suggestion/motivation to do so would have been to converting the part-compensated channel signals into electrical digital signals which are supplied to 2nd order multiple pole elliptical bandpass digital or analog filters (80-83) (See Fig. 5, Col 17, lines 5-14). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Little et al. with the Naito to obtain the inventions specified in claim 7.

Regarding claims 12 and 14, these claims have limitation that is similar to those of claim 1 and Naito further teaches that a dispersion-compensating fiber is provided as

the common optical dispersion compensator (52 indexed) and the common optical dispersion compensator (52 indexed) effects a slight under-compensation of the individual channel signals (See Fig. 17, Col. 9, lines 26-35), thus it is rejected with the same rationale applied against claim 7 above.

Regarding claims 13 and 15, these claims have limitation that is similar to those of claim 1 and Naito further teaches that a dispersion-compensating fiber provided as the common optical dispersion compensator (52 indexed) which effects a slight under-compensation of the individual channel signals may be high-dispersion fiber (a wide-band chirped fiber grading) (See Fig. 17, Col. 1, lines 55-62), thus it is rejected with the same rationale applied against claim 7 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is (571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rk
rk

Richard Chang
Patent Examiner
Art Unit 2663

Ricky Ngo
RICKY NGO
PRIMARY EXAMINER 4/18/05